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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,249	03/17/2004	Ralf Mauritz	21718 US; 36876-13	5270
67491 7590 06/22/2012 DINSMORE & SHOHL, LLP FIFTH THIRD CENTER ONE SOUTH MAIN STREET SUITE 1300 DAYTON, OH 45402			EXAMINER GROSS, CHRISTOPHER M	
			ART UNIT 1636	PAPER NUMBER
			NOTIFICATION DATE 06/22/2012	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/802,249	<b>Applicant(s)</b> MAURITZ ET AL.	
	<b>Examiner</b> CHRISTOPHER M. GROSS	<b>Art Unit</b> 1636	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2012.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 5) ☒ Claim(s) 1-3, 13 and 15-22 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1-3, 13, and 15-22 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                          |

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### **DETAILED ACTION**

Responsive to communications entered 3/8/2012.

Claims 1-3, 13, and 15-22 are pending.

Claims 1-3, 13, and 15-22 are under consideration.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/8/2012 has been entered.

### ***Priority***

This application was filed 3/17/2004 and application claims foreign priority to EPO 03006098.2 (3/19/03). Receipt is as previously acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Maintained Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 13, 15-22 are rejected under 35 U.S.C. 102(b) as being anticipated by **Agris** (US Application Publication 20020045167; of record).

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**Agris** teaches, throughout the document and especially the abstract and paragraphs 0002-0006 and figure 11, antibodies specific for oligonucleotide protecting groups applied toward detecting incomplete deprotection on microarrays.

In paragraphs 0154-0157, Agris suggest the antibodies may be used on chips such as developed by Fodor, etc. which are made by synthesizing a plurality of biopolymer species on an array from monomeric or oligomeric nucleotide building blocks comprising detectable protecting groups coupled directly to amino groups of the nucleotide building blocks, wherein the detectable protecting groups remain coupled until synthesis of the biopolymer array is complete, as set forth in claim 1a. In figure 8, Agris takes a step to cleave detectable protecting groups such as Bz and ipr-Pac, as set forth in claim 1b; with said antibodies, determine the degree of deprotection by detecting any of Bz and ipr-Pac remaining on an array after cleavage, as set forth in claim 1c; and re-deprotect until the detectable protecting groups are no longer detected, indicating that complete deprotection is achieved, as set forth in claim 1d. Antibody binding does not destroy the oligonucleotides as set forth in the second wherein clause of claim 1.

In paragraph 0037, Argis et al indicate the method may be used with fluorescent protecting groups such as fluorenylmethoxycarbonyl (Fmoc) , as set forth in claims 1 and 2.

Said oligonucleotide reads on the nucleic acid (elected species) of claim 13.

Argis teaches various protected monomeric building blocks in paragraphs 0035-0077 and in particular uses (5'-dimethoxytrityl-N-phenoxyacetyl-2'-deoxyAdenosine,3'-[(2- cyanoethyl)-(N,N-diisopropyl)]-phosphoramidite in paragraph 0177, which reads on

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claims 15-22 formula I when R1 is DMT; R2 is H; B is adenine; R6 is a 2 cyanoethyl phosphoramidite; L is -C(O)-R, reading on claims 15-22.

### *Response to Arguments*

In the remarks entered 3/8/2012 applicant argues not all elements are taught.

Applicant's arguments have been fully considered but they are not deemed persuasive for the following reasons.

Page 7 first full paragraph of the remarks asserts that assaying for deprotection with antibodies (by immunoassay) per Agris requires removal of oligonucleotides from a chip of interest therein urging the utility of the chip is lost.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., protecting groups detected by methods other than immunoassay) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

This is not found persuasive because the arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) ("An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a prima facie case of obviousness.") (see MPEP 2145 I.) In the instant case, Applicant's counsel argues the

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chip illustrated in figure 8 of Agris has lost utility, however counsel does not provide objective evidence establishing this as a fact.

Page 7 second full paragraph of the remarks asserts the term "detectable," as discussed during the 1/9/2012 interview should not be interpreted by operation or functionality but rather its plain meaning.

In this vein, the plain meaning of "detectable" in claim 1a is able to be detected. As discussed in the last office action and the above rejection, protecting groups such as Fmoc disclosed by Agris are able to be detected by means including fluorescence and UV absorbance (at 365 nm), the former consistent with paragraph 0022 of the present specification in so far as Fmoc is sometimes used as an orthogonal amino (stable) amino protecting group for oligonucleotide synthesis, likewise the latter is consistent with paragraph 0025 in so far as 365 nm is a unique absorbance not present in oligonucleotides or peptides (biopolymers) being synthesized. Unfortunately, claim 1a, as currently amended merely introduces a broader recitation of formerly presented claim 2 (which has been previously rejected over Agris), accordingly the manner in which the claims have been amended does not distinguish the claimed subject matter from the prior art. The examiner respectfully submits, on the contrary, it is applicant that is interpreting the term "detectable" by operation or functionality (i.e. detection by means other than immunoassay) since applicant has *not* amended the actual positive action step of detecting set forth in claim 1c.

***Maintained Claim Rejection(s) - 35 USC § 103***

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-2, 13, 15-22 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Agris** (US Application Publication 20020045167; of record) in view of **Nagaich et al** (1989 Nucleic Acids Research 17: 5125-5134)

**Agris** is relied on as above.

**Agris** does not teach stilbene protecting groups, such as set forth in claim 3.

**Nagaich et al** teach, throughout the document and especially figure 1, stilbene protecting groups (elected species) for cytidine, adenine and guanine nucleosides reading on claim 3.

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It would have been *prima facie* obvious for one of ordinary skill in the art, at the time the claimed invention was made to utilize the stilbene protecting groups of Nagaich et al in making microarrays and analysis of deprotection thereof as disclosed by Agris.

One of ordinary skill in the art would have been motivated to utilize the stilbene protecting groups of Nagaich et al in making microarrays and analysis of deprotection thereof as disclosed by Agris for the advantages of: (i) stability of the monomers; (ii) milder conditions for deprotection resulting in negligible side products during synthesis; and (iii) above all greater hydrophobicity, as explicitly noted by Nagaich et al in last sentence of the abstract.

One of ordinary skill in the art would have had a reasonable expectation of success in applying the stilbene protecting groups toward preparing and analyzing biochips concerning Agris since each reference is directly concerned with nucleotide exocyclic amine protection, thus the teachings of Nagaisch et al fall squarely in the scope of technology of interest to Agris.

### *Response to Arguments*

The remarks entered 3/8/2012 assert not all elements are taught.

Applicant's arguments have been fully considered but they are not deemed persuasive for the following reasons.

Specifically, pp 10-12 of the remarks asserts the present invention enables detection of residual protecting groups directly, that is without using antibodies in the manner of Agris.



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In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Here, applicant's attention is respectfully invited to Nagaich et al table 2, which teaches directly detecting the stillbene protecting group by UV spectroscopy, for example at 308 nm.

This is a RCE of applicant's earlier Application No. 10/802,249. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER M. GROSS whose telephone number is (571)272-4446. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel can be reached on 571 272 0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CHRISTOPHER M GROSS  
Primary Examiner  
Art Unit 1636

Most Respectfully,

/CHRISTOPHER M GROSS/  
Primary Examiner, Art Unit 1636